

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-26. (canceled)

27. (currently amended) A polyvalent bifunctional catalyst, characterized by the fact that [[it]] said catalyst comprises, deposited on a support TiO_2 , an oxide or a mixture of metallic oxides of MO_2 type prepared by the reduction of the corresponding MO_3 oxide(s), and wherein said polyvalent bifunctional catalyst has a metallic-acidic surface that can catalyze at the same time redox reactions and acid-base reactions.

28. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that the metal(s) forming the oxide(s) are chosen from the group formed by W and Mo.

29. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that the metallic oxide obtained by reduction on the support is WO_2 .

30. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that the metallic oxide obtained by reduction on the support is MoO_2 .

31. (previously presented) A catalyst corresponding to claim 27, which is characterized by the fact that the metallic oxide(s) MO_3 which are reduced to MO_2 are deposited on a support TiO_2 which itself could be deposited on a substrate having larger surface area than TiO_2 .

32. (currently amended) A catalyst corresponding to claim 31, characterized by the fact that the said substrate is preferably selected from the group consisting of SiO_2 , Al_2O_3 [[or]] and a zeolite.

33. (currently amended) A catalyst corresponding to claim 27, characterized by the fact that the reduction process takes place under a gaseous flux containing at least hydrogen at temperatures between $380^{\circ}C$ and $550^{\circ}C$, during at least 6 hours, at a flow rate between 0.010 l/min and 0.050 l/min, preferably 0.030 l/min, with a volume between 90% and 100% of hydrogen[[,]] ~~preferably 99% hydrogen.~~

34. (previously presented) A catalyst corresponding to the claim 33, characterized by the fact that the reduction take place under a gaseous flux containing hydrogen and a gaseous hydrocarbon compound which undergoes a chemical reaction using this catalyst.

35. (currently amended) A catalyst corresponding to claim 34, characterized by the fact that the gaseous hydrocarbon

is present under a partial pressure range between 666.6 Pa and 1999.8 Pa[[,]] ~~preferably 799.9 Pa.~~

36. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that the oxide(s) MO_3 are deposited in atomic layers on a support before being reduced to MO_2 , this reduction process having no effect on the number of layers.

37. (currently amended) A catalyst corresponding to claim 36, characterized by the fact that the number of atomic layers of MO_2 present on the surface of the support ranges between 1 to 8[[,]] ~~preferably 5.~~

38. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that it contains in weight 5.4% and 27% of MoO_3 , which corresponds to 4.8% to 24% in weight of MoO_2 .

39. (previously presented) A catalyst corresponding to claim 27, characterized by the fact that it contains in weight between 6% and 30% of WO_3 , which corresponds to 5.7% to 28% in weight of WO_2 .

40. (currently amended) A process for obtaining a catalyst ~~corresponding to any of the claims from 27, characterized by the fact that it contains the following steps~~ according to claim 27, comprising:

- ~~To prepare~~ preparing a mechanical mixture from one or many MO_3 oxides with TiO_2 alone or TiO_2 deposited on a substrate having larger surface area than TiO_2 , this mixture containing an amount of the metal M which varies between 5% and 25%, ~~preferably 22%,~~

- ~~To crush~~ crushing the mixture prepared in the previous step, and

- ~~To reduce~~ preferably reducing at 460°C the oxide(s) MO_3 , thus deposited as corresponding MO_2 oxides under a flux of a gas containing at least hydrogen over the oxides MO_3 .

41. (currently amended) [[A]] The process ~~of realization corresponding~~ according to claim 40, characterized by the fact that the step of depositing the oxide(s) MO_3 takes place by mechanically mixing the crushed MO_3 oxide(s) with TiO_2 or TiO_2 deposited on a substrate having larger specific surface area than TiO_2 .

42. (currently amended) [[A]] The process ~~for obtaining a catalyst corresponding~~ according to claim 27, ~~characterized by the fact that it contains the following steps comprising:~~

- ~~To wash~~ washing the crude support, followed by drying and calcination,

- ~~To crush~~ crushing the obtained solid, then sieving it,

- ~~To deposit~~ depositing the MoO_3 oxide(s) on the TiO_2 support or TiO_2 deposited on a substrate having larger surface

area than TiO_2 by impregnating the so called support with a solution metal M salt(s),

- ~~To calcinate~~ calcinating the obtained product in order to form the MO_3 oxide(s), and

- ~~To reduce~~ reducing preferably at 510°C the MoO_3 oxide(s) to the corresponding MO_2 oxides by passing a gaseous flux containing at least hydrogen over the MoO_3 oxide(s).

43. (currently amended) [[A]] The process ~~of realization corresponding~~ according to claim 42, characterized by the fact that only the particles diameters vary between $80\ \mu\text{m}$ and $400\ \mu\text{m}$ are kept following sieving.

44. (currently amended) [[A]] The process ~~of realization corresponding~~ to [[claims]] claim 42, characterized by the fact that the impregnation of the metal M salt(s) takes place for 2 to 4 hours, preferably 3 hours, at temperatures between 50°C to 90°C , ~~preferably 70°C .~~

45. (currently amended) [[A]] The process ~~corresponding according~~ to claim 42, characterized by the fact that in order to obtain WO_3 then WO_2 a tungsten salt, ~~preferably $(\text{NH}_4)_{10}\text{W}_{12}\text{O}_{41} \cdot 5\text{H}_2\text{O}$~~ is used.

46. (currently amended) [[A]] The process ~~corresponding according to~~ claim 42, characterized by the fact that in order to obtain MoO_3 [[then]], MoO_2 a molybdenum salt, ~~preferably $(\text{NH}_4)_6\text{Mo}_7\text{O}_{24} \cdot 4\text{H}_2\text{O}$~~ is used.

47. (currently amended) [[A]] The process corresponding according to claim 42, characterized by the fact that the impregnation of the further comprising impregnating a support material takes place at a constant pH which is in the range between 1 and 4, preferably 2.

48. (currently amended) [[A]] The process corresponding according to claim [[42]] 47, characterized by the fact that the metal salt solution is in excess with respect to the support which is impregnated, the excess of the solution being evaporated in an oven after impregnation at temperatures in the range between 80°C and 120°C, preferably 100°C, for 10 to 14 hours, preferably 12 for 10 to 14 hours.

49. (currently amended) [[A]] The process of realization corresponding according to claim 40, characterized by the fact that the number of atomic layers of MO_3 present on the surface of the support ranges between 1 to 8, preferably 5.

50. (currently amended) [[A]] The process of realization corresponding according to claim 40, characterized by the fact that the metal forming the oxides MO_2 are selected in the group formed by W and Mo.

51. (previously presented) A method of increasing the rate of a chemical reaction, comprising:

adding a catalyst corresponding to claim 27, characterized by the fact that this catalyst is added in a

reaction of isomerization, hydrogenation, dehydrogenation and/or hydrogenolysis of saturated hydrocarbons.

52. (previously presented) A method of increasing the rate of a chemical reaction, comprising:

adding a catalyst corresponding to claim 27, characterized by the fact that this catalyst is added in a reaction of isomerization, dehydrogenation, hydrogenation and/or hydrogenolysis of mono or poly unsaturated hydrocarbons.